

Climate Change and Unresolved Issues in WTO Law

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Abstract

This article analyzes several unresolved issues in WTO law that may affect the WTO-consistency of measures that are likely to be taken to address climate change. How should the WTO deal with environmental subsidies under the GATT, the Agreement on Agriculture and the SCM Agreement? Can the general exceptions in GATT Article XX be applied to other agreements in Annex 1A? Are processing and production methods relevant to determining the issue of “like products” in GATT Articles I and III, the SCM Agreement and the Antidumping Agreement and the TBT Agreement? What is the scope of paragraphs b and g in GATT Article XX and the relationship between these two paragraphs? What is the relationship between GATT Article XX and multilateral environmental agreements in the context of climate change? How should Article 2 of the TBT Agreement be interpreted and applied in the context of climate change? The paper explores these issues.

I. Introduction

Measures aimed at addressing climate change raise legal issues regarding the relationship between WTO Law and international environmental law and the relationship between various WTO Agreements. This article first provides an overview of categories of climate change policies that are likely to raise issues in WTO law. The remainder of the paper analyzes several unresolved issues in WTO law that may affect the WTO-consistency of measures that are likely to be taken to address climate change: (1) how to deal with environmental subsidies under the GATT 1994, the Agreement on Subsidies and Countervailing Measures (SCM Agreement)¹ and the Agreement on Agriculture;² (2) whether processing and production methods are relevant to determining the issue of “like products” in GATT Articles I and III, the SCM Agreement, the Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994 (Antidumping Agreement)³ and the Agreement on Technical Barriers to Trade (TBT

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¹ GATT Secretariat, *The Results of the Uruguay Round of Multilateral Trade Negotiations, the Legal Texts* (Geneva, 1994), 231.

² GATT Secretariat, *The Results of the Uruguay Round of Multilateral Trade Negotiations, the Legal Texts* (Geneva, 1994), 33.

³ GATT Secretariat, *The Results of the Uruguay Round of Multilateral Trade Negotiations, the Legal Texts* (Geneva, 1994), 147.

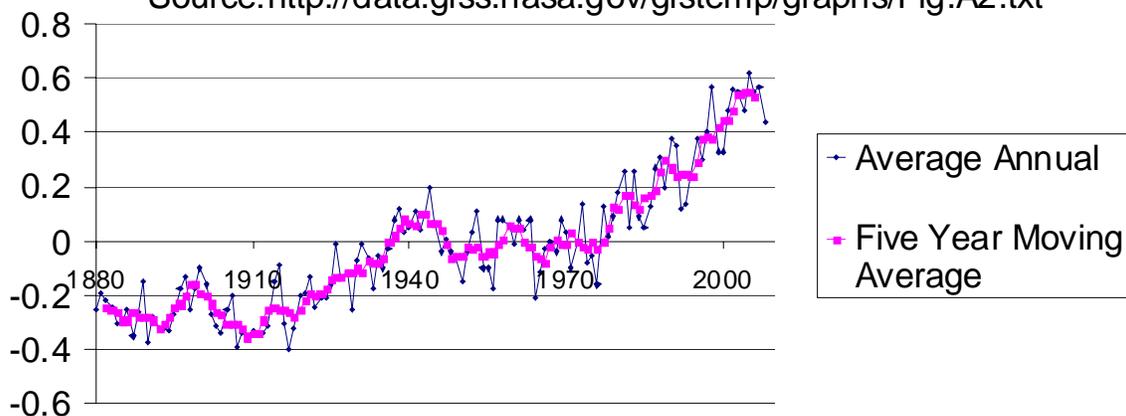
Agreement);⁴ (3) the relationship between GATT Article XX, other WTO Agreements and multilateral environmental agreements; and (4) the interpretation and application of Article 2 of the TBT Agreement. The focus of this article is these unresolved issues rather than the WTO-consistency of specific climate change measures.

II. Emerging climate change policies

In April 2009, the American Environmental Protection Agency formally declared carbon dioxide and five other heat-trapping gases to be pollutants that endanger public health and welfare.⁵ This will lead to the regulation of the gases for the first time in the United States under the Clean Air Act. The following figure displays data on changes in global land and ocean surface temperatures since 1880.⁶ This data, together with the policy pronouncements of the Obama administration and the actions already taken in other jurisdictions, suggests that measures to address climate change are likely to multiply in the near future.

Global Land+Ocean Surface Temperature Anomaly (Centigrade) AD 1880-2008

Source: <http://data.giss.nasa.gov/gistemp/graphs/Fig.A2.txt>



The principal policy alternatives to address climate change fall under three categories: (1) the cap-and-trade approach; (2) standards-based policies, which require the adoption of specific measures or set source-specific emissions limits; and (3) carbon taxes.⁷ Depending on the manner in which these policies are implemented, they may raise issues of WTO compatibility. If pollution permits are distributed or sold in a discriminatory manner, a cap-and-trade system could be inconsistent with the non-discrimination obligations of GATT Articles I:1 and III:4. Similarly, if carbon taxes are applied in a discriminatory manner, there could be a violation of GATT Article III:2. If the revenue from carbon taxes is used to grant subsidies, those subsidies might be

⁴ GATT Secretariat, *The Results of the Uruguay Round of Multilateral Trade Negotiations, the Legal Texts* (Geneva, 1994), 121.

⁵ John M. Broder, 'EPA Clears Way for Greenhouse Gas Rules', www.nytimes.com, 17 April 2009.

⁶ Thank you to Tapen Sinha for providing me with this figure.

⁷ Robert N. Stavins, 'A U.S. Cap-and-Trade System to Address Global Climate Change', <http://ssrn.com/abstract=1026353> (visited 10 April 2009).

inconsistent with the SCM Agreement. Standards-based policies could also be implemented in a discriminatory manner, contrary to the GATT and the TBT Agreement.

A cap-and-trade system establishes a price on emissions through market forces. It places a limit on the combined emissions of a group of regulated pollution sources by creating a limited number of tradable pollution permits or emissions allowances for a given period and requiring firms to surrender a quantity of allowances equal to their emissions during that period, without imposing particular limits on emissions from any given firm or source. The government distributes pollution permits to firms, for free or sold at auction. The firms can then sell a portion of their permits to firms whose costs of reducing emissions are higher. The emissions cap can be imposed “upstream” (on fossil fuels at the point of extraction, processing, or distribution) or “downstream” (at the point of combustion). A cap-and-trade system can gradually reduce the caps over time to encourage investment in emission-reducing technology.⁸ Cap-and-trade systems are easier to harmonize internationally, since pollution permits denominated in units of carbon content of fossil fuels or CO₂ emissions create a natural unit of exchange for harmonization.⁹

Carbon taxes are a market-based alternative to a cap-and-trade system. Both policies put a price on CO₂ emissions. However, whereas a carbon tax sets the price of CO₂ emissions, a cap-and-trade system sets the amount of emissions and allows the price of the emissions to adjust to meet the emissions cap. A cap-and-trade system provides more certainty regarding whether emissions targets will be met, but less certainty regarding the cost of meeting those targets. Conversely, a carbon tax provides less certainty regarding whether emissions targets will be met, but more certainty regarding the cost of meeting the emissions targets. Under a cap-and-trade system, the firms that face higher adjustment costs can be granted pollution permits that can be sold in the market. Under a carbon tax system, those firms can be granted tax exemptions or benefit from the redistribution of the tax revenue. Tradable tax exemptions and redistribution of tax revenue could provide the same level of distributional flexibility as a cap-and-trade system, but political and practical considerations may limit what can be done in practice.¹⁰ Moreover, the manner in which economic benefits are distributed may raise issues regarding the compliance of the system with the SCM Agreement. The principal advantage of a carbon tax is that it eliminates the potential price volatility of a cap-and-trade system, while the principal disadvantage of a carbon tax is political resistance to new taxes.¹¹

Standards—a command-and-control system—could be used instead of or together with a market-based cap-and-trade system. However, standards may be less effective and less efficient than a cap-and-trade system, because: (1) standards are likely to apply to new equipment only, thereby creating a disincentive to replace old equipment; (2) standards are unlikely to address all sources of emissions, due to administrative limitations and pressure on legislators to grant exemptions; (3) the lack of flexibility inherent in uniform standards does not permit taking into account variations in the cost of

⁸ Ibid, at 7-8.

⁹ Ibid, at 53.

¹⁰ Ibid, at 49-51.

¹¹ Ibid, at 52.

compliance; and (4) it is more difficult to mitigate the distributional implications of standards, meaning that the costs of compliance can vary significantly.¹²

In addition to the foregoing policy alternatives, countries may choose to apply tariffs or border taxes that discriminate between different products based on differences in national climate change policies or differences in the carbon footprints of products, or may provide direct subsidies to domestic producers. The GATT consistency of such border tax adjustments is unclear.¹³ Some companies have begun to measure the carbon footprint of their products and to display the results on their websites or on their packaging.¹⁴ This trend coincides with a movement towards standards regarding the measurement of carbon footprints and labeling and may facilitate the design and application of tariffs, border taxes or other trade restrictions that are based on differences in the carbon footprints of products.

There are already examples of these measures. A proposed EU biofuels directive would impose sustainability criteria and require certification of biofuels production according to their greenhouse gas emissions.¹⁵ Malaysia and Indonesia account for the majority of biofuels made from palm oil, which would fall below the proposed minimum EU requirement.¹⁶ Brazil has complained about US and EU ethanol tariffs, which protect American corn-based ethanol and European ethanol made from sugar beets and wheat, and has sought their elimination in the Doha Round.¹⁷ The United Nations Development Program has called for the elimination of these ethanol tariffs because Brazilian sugarcane-based ethanol reduces greenhouse gas emissions by up to 70 percent, compared to 13 percent for corn-based ethanol.¹⁸ Brazil also has complained about US subsidies for corn-based ethanol and the EU has threatened to impose countervailing duties to address the same subsidies.¹⁹ In March 2009, the US Energy Secretary advocated establishing a carbon tariff to address competitiveness concerns if other

¹² Ibid, at 48-49.

¹³ This issue has been analyzed elsewhere. See for example Richard G. Tarasofsky, 'Heating Up International Trade Law: Challenges and Opportunities Posed by Efforts to Combat Climate Change' 2 *Carbon & Climate Law Review* 7 (2008), at 11.

¹⁴ Andrew Martin, 'How Green Is My Orange?' www.nytimes.com, 21 January 2009.

¹⁵ 'EU's sustainable biofuels push angers Malaysia, Brazil' [mongabay.com](http://news.mongabay.com), 7 November 2008, <http://news.mongabay.com/2008/1107-biofuels.html> (visited 12 April 2009).

¹⁶ 'EU biofuels regulation', http://www.malaysiapalmoil.org/pdf/New_EU_Biofuel_Directive.pdf (visited 7 March 2009). Multa Fidrus, 'Minister lobbies EU over palm oil restrictions', *The Jakarta Post*, <http://www.orangutans.com.au/Manager/Item.aspx?id=Minister-lobbies-EU-over-palm-oil-restrictions&AspxAutoDetectCookieSupport=1> (visited 7 March 2009).

¹⁷ Bradley S. Klapper, 'Brazil weighs WTO ethanol case against US', *Associated Press*, 30 July 2008. Inae Riveras, "Biofuels protectionism trumps climate concerns", 16 January 2008, <http://www.reuters.com/article/GlobalAgricultureandBiofuels08/idUSN166111120080116> (visited 8 March 2009).

¹⁸ Jim Lane, 'Brazilian sugarcane head said EU, US, Argentine biofuel trade policies about economic benefit, not global emission reductions', 17 January 2008, <http://www.biofuelsdigest.com/blog2/2008/01/17/brazilian-sugarcane-head-said-eu-us-argentine-biofuel-trade-policies-about-economic-benefit-not-global-emission-reductions/> (visited 8 March 2009).

¹⁹ Riveras, above n 17. Another case regarding Canadian and Brazilian complaints against U.S. agricultural subsidies under the Agreement on Agriculture and the SCM Agreement is currently in progress: *United States – Domestic Support and Export Credit Guarantees for Agricultural Products*, DS365. The DSB established a single panel at its meeting on 17 December 2007.

countries do not impose greenhouse-gas-reduction mandates similar to those of the United States.²⁰

III. Environmental Subsidies

Subsidies will raise issues under GATT 1994, the Agreement on Agriculture and the SCM Agreement. The SCM Agreement applies cumulatively with GATT Articles VI and XVI. If the subsidies apply to agricultural goods, they may raise issues under the SCM Agreement or the Agreement on Agriculture or both. In general, panels examine claims under the more specific agreement on trade in goods before examining claims under the GATT 1994, because a provision of the more specific agreement prevails over a GATT 1994 provision in the event of a conflict.²¹ However, the SCM Agreement does not preclude action “under other relevant provisions of GATT 1994, where appropriate”.²² Moreover, while claims regarding agricultural subsidies are examined first under the Agreement on Agriculture,²³ some are also subject to the disciplines of the SCM Agreement.

An export subsidy that violates Articles 3.3 and 8 of the Agreement on Agriculture also violates SCM Agreement Article 3.1(a).²⁴ However, it seems less likely that an export subsidy that is *consistent* with the Agreement on Agriculture could be impugned under SCM Agreement Article 3.1(a). Since the former agreement permits certain export subsidies and the latter prohibits all export subsidies, there appears to be a conflict.²⁵ Given the conflict, the more specific provisions of the Agreement on Agriculture should prevail.²⁶ Nevertheless, this issue will become moot if WTO Members eliminate all agricultural export subsidies, as they agreed to do at the Ministerial conference in Hong Kong.²⁷ In contrast, even if WTO Members comply with their

²⁰ OMC, Noticias, 18 de marzo de 2009 (on file with author).

²¹ General interpretative note to Annex 1A.

²² SCM Agreement, note 56.

²³ SCM Agreement, Article 3.1.

²⁴ WTO Appellate Body Report, *United States – Subsidies on Upland Cotton (US – Upland Cotton)*, WT/DS176/AB/R, adopted 21 March 2005, paras 582-584.

²⁵ In this situation, there is a conflict of norms in the sense that the exercise of rights under one norm constitutes a breach under the other norm. See Joost Pauwelyn, *Conflict of Norms in Public International Law: How WTO Law Relates to other Rules of International Law* (Cambridge: Cambridge University Press, 2003) 275.

²⁶ Agreement on Agriculture, Article 21.1. Not everyone agrees with this conclusion. However, the inconsistency between the two agreements is such that it would be difficult to reconcile through interpretation. If the application of the SCM Agreement means that the right to employ certain export subsidies in accordance with the Agreement on Agriculture is denied, the relevant provisions of the Agreement on Agriculture would not be effective. This result would run counter to the rule of effective treaty interpretation. Both agreements define export subsidies as being contingent upon export performance. See Agreement on Agriculture, Article 1(e) and SCM Agreement Article 3.1(a). For a detailed análisis of the relationship between the Agreement on Agriculture and the SCM Agreement, see Luís Yahir Acosta Pérez, ‘La Relación entre el Acuerdo sobre Agricultura y el Acuerdo sobre Subvenciones y Medidas Compensatorias’, <http://cdei.itam.mx/AcostaSMCAA.pdf>. Also see Bradley J. Condon, *El Derecho de la Organización Mundial de Comercio: Tratados, Jurisprudencia y Practica* (London: Cameron May, 2007) 278.

²⁷ Hong Kong Ministerial Declaration, WT/MIN(05)/DEC, Adopted on 18 December 2005, para 6.

obligations regarding domestic support commitments in the Agreement on Agriculture, they could still violate Article 3.1(b) of the SCM Agreement if those domestic subsidies are made contingent on the use of domestic goods.²⁸

Subsidies are also subject to Part III (actionable subsidies) and Part V (countervailing measures) of the SCM Agreement. Agricultural subsidies are also subject to these Parts of the SCM Agreement.²⁹ Thus, subsidies related to climate change policies could be subject to multilateral action under Part III or unilateral action under Part V.³⁰

In addition to more obvious subsidies, carbon taxes could be structured in a manner that violates provisions of the SCM Agreement (for example, differential taxation of “carbon-friendly” products). Since the SCM Agreement and GATT Article III:2 are not mutually exclusive, such measures could be subject to both sets of obligations. These two sets of provisions can apply cumulatively to different aspects of the same measure.³¹ The same logic would apply to the relationship between the SCM Agreement and GATT Article I:1.

While some have argued in favor of imposing countervailing duties against products from countries that do not require emissions reductions, the definition of subsidy would likely preclude such actions unless, for example, a country applied a general carbon tax but then subsidized a specific industry by not collecting the tax.³² The SCM Agreement only applies to a measure if it constitutes a subsidy within the meaning of SCM Agreement Article 1.1. A ‘financial contribution’ and a ‘benefit’ are two separate legal elements in Article 1.1, which together determine whether a subsidy exists.³³ The differential application of carbon taxes could constitute a “financial contribution by a government” within the meaning of Article 1.1(a)(1)(ii). The two principal cases on this point held that there was a subsidy within the meaning of SCM Agreement Article 1.1(a)(1)(ii) in the following situations: (1) different tax treatment for income from foreign and domestic sales (*US – FSC*) and (2) an exemption from payment of a MFN import duty that would otherwise apply to auto imports, conditional upon domestic production requirements (*Canada – Autos*).

According to the Appellate Body, “the mere fact that revenues are not ‘due’ from a fiscal perspective does not determine that the revenues are or are not ‘otherwise due’ within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement”.³⁴ A “financial contribution” does not arise simply because a government does not raise revenue which it could have raised. The term “otherwise due” implies a comparison with a “defined normative benchmark”, as established by the tax rules applied by the Member in

²⁸ Appellate Body Report, *US – Upland Cotton*, above n 24, para 550.

²⁹ Condon (2007), above n 26, at 334.

³⁰ These parts of the SCM Agreement are discussed below.

³¹ WTO Panel Report, *Indonesia – Certain Measures Affecting the Automobile Industry (Indonesia – Autos)*, WT/DS54/R, WT/DS55/R, WT/DS59/R, WT/DS64/R, adopted 23 July 1998, paras 14.36, 14.97-14.99.

³² Tarasofsky, above n 13, at 14.

³³ WTO Appellate Body Report, *Brazil – Export Financing Programme for Aircraft (Brazil – Aircraft)*, WT/DS46/AB/R, adopted 20 August 1999, para 156.

³⁴ WTO Appellate Body Report, *United States – Tax Treatment for ‘Foreign Sales Corporations’ (Article 21.5 – EC) (US – FSC (Article 21.5 – EC))*, WT/DS108/AB/RW, adopted 29 January 2002, para 88.

question.³⁵ The determination of “whether revenue foregone is otherwise due must allow a comparison of the fiscal treatment of comparable income, in the hands of taxpayers in similar situations”.³⁶

If a country taxes products according to their carbon footprint, the most probable result is that different products will be subject to different tax rates. One example is where fossil fuels are subject to a sales tax that is not applied to other products, as is already the case in some jurisdictions.³⁷ A more elaborate scheme might apply different levels of sales taxes to different categories of products based on different ranges of carbon footprints, taking into account the production of carbon emissions during the lifecycle of the products. If such schemes are designed so that domestic products are subject to a lower tax than imported products, then the lower tax rate might constitute revenue foregone that is otherwise due.³⁸ This could be the case if countries diverge in their regulation and reduction of carbon emissions, so that some countries engage in less carbon-intensive production than others.³⁹ The reference in footnote 1 to “the exemption of an exported product from duties or taxes borne by the like product” could indicate that Article 1.1(a)(1)(ii) is intended to apply to other cases where like products receive different consumption tax treatment.⁴⁰ However, revenue is not otherwise due just because certain revenue is not taxed (or not taxed at as a high a level as it could be); a WTO Member is “free *not* to tax any particular categories of revenues”.⁴¹ Thus, it is not clear in which circumstances differential taxation of products based on their carbon footprints might constitute a “financial contribution by a government” within the meaning of the SCM Agreement.

In *Canada – Aircraft*, the Appellate Body interpreted of the term “benefit” under Article 1.1(b) as follows: “a financial contribution will only confer a ‘benefit’, i.e., an advantage, if it is provided on terms that are more advantageous than those that would have been available to the recipient on the market.”⁴² “A ‘benefit’...must be received and enjoyed by a beneficiary or a recipient” and “calls for an inquiry into what was conferred on the recipient”; the measurement of the benefit is not whether there was a cost to the government.⁴³ The person or entity receiving the benefit does not have to be the same as the one who received the financial contribution.⁴⁴ Thus, Article 1.1(b) requires an

³⁵ WTO Appellate Body Report, *United States – Tax Treatment for ‘Foreign Sales Corporations’ (US – FSC)*, WT/DS108/AB/R, adopted 20 March 2000, para 90.

³⁶ Appellate Body Report, *US – FSC (Article 21.5 – EC)*, above n 34, para 98.

³⁷ For example, the Canadian province of British Columbia introduced a carbon tax on fossil fuels in 2008.

³⁸ If both the domestic and imported products are substitutable inputs for domestic production (as is the case with fuels) and the foregone revenue confers a benefit, then there could be a violation of SCM Agreement Article 3.1(b).

³⁹ Moreover, such divergences in the carbon intensity of production would probably lead to differential treatment of imports, thereby raising issues regarding MFN treatment.

⁴⁰ In this regard, the Appellate Body has stated: ‘The tax measures identified in footnote 1 as not constituting a ‘subsidy’ involve the exemption of exported products from product-based consumption taxes’. Appellate Body Report, *US – FSC*, above n 35, para 93.

⁴¹ *Ibid*, para 90.

⁴² WTO Appellate Body Report, *Canada – Measures Affecting the Export of Civilian Aircraft (Canada – Aircraft)*, WT/DS70/AB/R, adopted 20 August 1999, para 149.

⁴³ *Ibid*, para 154.

⁴⁴ WTO Appellate Body Report, *United States – Countervailing Measures Concerning Certain Products from the European Communities*, WT/DS212/AB/R, adopted 8 January 2003, para 110.

analysis of whether a benefit is obtained from differential carbon tax rates, by whom, whether such a benefit could have been otherwise obtainable in the marketplace, and what the relevant marketplace is.

Could environmental subsidies that are inconsistent with the SCM Agreement or the Agreement on Agriculture be justified under GATT Article XX? Marceau and Trachtman have suggested that it would require a “heroic approach to interpretation” to extend the application of GATT Article XX to justify a violation under another agreement of Annex 1A.⁴⁵ However, in *US – Shrimp (Thailand)* and *US – Customs Bond Directive*, the Appellate Body declined to express a view on whether a defense under GATT Article XX(d) was available to justify a measure found to constitute a “specific action against dumping” under Article 18.1 of the Antidumping Agreement.⁴⁶ Article 18.1 of the Anti-Dumping Agreement provides that “[n]o specific action against dumping of exports from another Member can be taken except in accordance with the provisions of the GATT 1994, as interpreted by this Agreement.” Having found that the enhanced continuous bond requirement (EBR) constituted “specific action against dumping” and that it was not a “reasonable security” under the Ad Note to Article VI of the GATT 1994, and thus was not “in accordance with the provisions of the GATT 1994, as interpreted by the [Anti-Dumping] Agreement”, the Panel in that case examined the United States’ defense under Article XX(d) of the GATT 1994, but found that the measure could not be justified as necessary.

The chapeau of GATT Article XX indicates that the general exceptions apply to “this Agreement”. This appears to exclude the application of Article XX beyond the provisions of the GATT itself. However, the provisions of the GATT serve as the starting point for the majority of the multilateral agreements on trade in goods. In the case of subsidies, GATT Articles VI (countervailing duties) and XVI (subsidies in general) apply together with the provisions of the SCM Agreement. Indeed, the principal object and purpose of the SCM Agreement is to augment and improve GATT disciplines regarding the use of subsidies and countervailing measures.⁴⁷ It would be odd if GATT Article XX could be applied to GATT Articles VI and XVI, but not to the SCM Agreement itself, absent evidence of a contrary intention.⁴⁸ However, this assumes that GATT Article XX

⁴⁵ Gabrielle Marceau and Joel Trachtman, ‘The Technical Barriers to Trade Agreement, the Sanitary and Phytosanitary Measures Agreement, and the General Agreement on Tariffs and Trade’, 36 *Journal of World Trade* 811 (2002) at 874. They note that Article XIV of GATS can be invoked to justify a violation of Article VI of GATS, which contains in its paragraph 4 a necessity test parallel to that of GATT Article XX and that of Article 2.2 of the TBT Agreement.

⁴⁶ WTO Appellate Body Report, *United States – Shrimp (Thailand)* and *United States – Customs Bond Directive*, WT/DS343/AB/R, WT/DS345/AB/R, adopted 1 August 2008, paras 310, 319.

⁴⁷ WTO Appellate Body Report, *United States – Countervailing Duties on Certain Corrosion-Resistant Carbon Steel Flat Products from Germany*, WT/DS2133/AB/R, adopted 19 December 2002, para 73; WTO Appellate Body Report, *United States – Final Countervailing Duty Determination with Respect to Certain Softwood Lumber from Canada*, WT/DS257/AB/R, adopted 17 February 2004, para 64. However, the SCM Agreement goes beyond merely applying and interpreting Articles VI, XVI and XXIII of the GATT 1947. See WTO Appellate Body Report, *Brazil – Measures affecting Deseccated Coconut (Brazil – Deseccated Coconut)*, WT/DS22/AB/R, adopted 20 March 1997, at 15. Also note that the name of the SCM Agreement (Agreement on Subsidies and Countervailing Measures), in contrast to that of the Antidumping Agreement (Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994), does not indicate that it serves merely to interpret and apply GATT provisions.

⁴⁸ Some might consider SCM Agreement Article 8 to be evidence of such a contrary intention.

could be applied to GATT Articles VI and XVI. It is not at all clear how this would work in the case of countervailing measures. Would environmental subsidies that meet the requirements of GATT Article XX be non-actionable and thus not subject to countervailing duties under Part V or multilateral action under Part III of the SCM Agreement? This was the case for a limited range of environmental subsidies before the expiry of SCM Agreement Article 8.⁴⁹ Since negotiators developed specific exceptions and language to address the issue of environmental subsidies, and did not incorporate the language of Article XX or incorporate Article XX by reference, it seems unlikely that GATT Article XX could be invoked to preclude action under parts III and V. Moreover, in the case of actionable subsidies under Part III, negotiators specified that Article 5 and 6 would not apply to subsidies maintained on agricultural products as provided in Article 13 of the Agreement on Agriculture.⁵⁰ While Article 13 has since expired, this indicates that negotiators turned their minds to the issue of whether to exclude certain types of subsidies from the application of Part III. Similarly, in Part V the non-actionability of certain types of subsidies, including environmental subsidies, was carefully circumscribed.⁵¹

However, environmental subsidies could be non-actionable under parts III and V of the SCM Agreement if differences in carbon footprints can be used to conclude that products are not “like” as that term is used in the SCM Agreement.⁵² In addition, environmental subsidies could be designed so as to not be specific to an enterprise or industry under SCM Agreement Article 2 and thereby be non-actionable under parts III and V.

What about prohibited subsidies (export subsidies and subsidies contingent on the use of domestic goods)? Such subsidies are deemed to be specific under Article 2.3. SCM Agreement Article 32.1 provides that “[n]o specific action against a subsidy of another Member can be taken except in accordance with the provisions of GATT 1994, as interpreted by this Agreement.” SCM Agreement note 56 provides that “[t]his paragraph is not intended to preclude action under other relevant provisions of GATT 1994, where appropriate.” However, SCM Agreement Article 3.1 indicates that export subsidies and subsidies contingent on the use of domestic goods are prohibited “[e]xcept as provided in the Agreement on Agriculture”. This could be interpreted as precluding the application of any other exceptions to SCM Agreement Article 3.1, including the general exceptions of GATT Article XX.

However, the preamble of the Agreement on Agriculture refers to “the need to protect the environment” and Article 14 of the Agreement on Agriculture indicates that the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement)⁵³ applies cumulatively to the Agreement on Agriculture. The preamble of the

⁴⁹ See SCM Agreement Articles 8.1, 8.2 (c), 8.3, 10 and 31. Also see footnote 35.

⁵⁰ See Articles 5 and 6.9.

⁵¹ See Articles 8 and 10 and footnote 35.

⁵² The term ‘like products’ is used for a variety of purposes in the SCM Agreement. It is a pivotal issue in Part V regarding, *inter alia*, the initiation of countervailing duty investigations (see Articles 11.2 (i), 11.4, 16.1) and the determination of injury (see Articles 15.1, 15.2, 15.3, 15.6 and, in Part III, regarding the determination of serious prejudice in paragraphs a, b, and c of Article 6.3. See Condon (2007), above n 26, at 331-332. The term ‘like products’ is analyzed below.

⁵³ GATT Secretariat, *The Results of the Uruguay Round of Multilateral Trade Negotiations, the Legal Texts* (Geneva, 1994), 59.

SPS Agreement indicates that it elaborates on GATT rules, in particular Article XX(b). Thus, the argument could be made that the Agreement on Agriculture opens the door to the application of GATT Article XX(b). However, the Agreement on Agriculture only applies to the “agricultural products” listed in Annex 1 of the Agreement on Agriculture.⁵⁴ Thus, even if one were to accept the foregoing argument, the application of GATT Article XX(b) to SCM Agreement Article 3.1 could be limited to measures affecting these agricultural goods. The more likely conclusion is that Article XX is not available to justify a violation of the Agreement on Agriculture. Rather, environmental subsidies that applied to agricultural products would have to comply with the commitments in the schedules of WTO Members. As with environmental subsidies for non-agricultural products, environmental subsidies for agricultural products could be non-actionable under parts III and V of the SCM Agreement either because they are not specific or because differences in carbon footprints are relevant in the like products analysis, as noted above.

A more general argument might be raised regarding the applicability of GATT Article XX to all Agreements in Annex 1A, including the SCM Agreement, based on the argument that all WTO Agreements are cumulative and apply simultaneously and that the effective interpretation principle requires that both rights (such as those in Article XX) and obligations are cumulative.⁵⁵ However, the foregoing analysis suggests that the applicability of GATT Article XX to the other agreements in Annex 1A would have to be considered one agreement at a time and even one provision at a time. This approach is consistent with the view of the Appellate Body that the relationship between the GATT 1994 and the other agreements in Annex 1A must be considered on a case-by-case basis.⁵⁶

IV. “Like Products” and Processing and Production Methods

The term “like products” is a key concept in the analysis of non-discrimination obligations in GATT Articles I:1, III:2 and III:4, as well as in the TBT Agreement. The issue of whether PPMs are relevant to determining the likeness of products also has implications for the SCM Agreement (and the Antidumping Agreement), since the term “like products” is relevant to a variety of key issues in those agreements.⁵⁷ The determination of which environmental concerns can be taken into consideration to determine the likeness of products would have wide-ranging consequences in WTO law.

In *Japan – Alcoholic Beverages II*, the Appellate Body explained that the “concept of ‘likeness’ is a relative one that evokes the image of an accordion. The width of the accordion must be determined by the particular provision in which the term ‘like’ is encountered as well as by the context and the circumstances that prevail in any given case to which that provision may apply.”⁵⁸ The jurisprudence suggests that the same four

⁵⁴ Agreement on Agriculture, Article 2.

⁵⁵ Marceau and Trachtman, above n 45, at 874-875.

⁵⁶ Appellate Body Report, *Brazil – Desiccated Coconut*, above n 47, at 13.

⁵⁷ See above n 52 and accompanying text. Also see Condon (2007), above n 26, at 331-332, 417. In these two agreements this term is defined, whereas it is not in the GATT or the TBT Agreement.

⁵⁸ WTO Appellate Body Report, *Japan – Taxes on Alcoholic Beverages (Japan – Alcoholic Beverages II)*, WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, adopted 1 November 1996, at 21.

criteria that apply to determine likeness in GATT Article III also apply in the context of GATT Article I.⁵⁹

The Appellate Body has consistently applied the following four criteria to determine whether products are in a competitive relationship that would lead to the conclusion that they are like products under GATT Article III: (1) The physical properties, nature and quality of the products; (2) The extent to which the products may serve the same or similar end uses in a given market; (3) The extent to which consumers perceive and treat the products as alternative means of satisfying a want or demand; and (4) Tariff classification of the products. In *EC – Asbestos*, the Appellate Body noted that these criteria are “simply tools to assist in the task of sorting and examining the relevant evidence. They are neither treaty mandated nor a closed list of criteria that will determine the legal characterization of a product.”⁶⁰ The source of the first three criteria is the Working Party Report on *Border Tax Adjustments*, while the fourth criterion was added by subsequent GATT panels. The purpose of the like products analysis is “to take account of evidence which indicates whether, and to what extent, the products involved are – or could be – in a competitive relationship in the marketplace”.⁶¹

As the Appellate Body noted in *Japan – Alcoholic Beverages II*, the tariff classification of products is a problematic criterion where it is not sufficiently detailed. Since the Harmonized System only harmonizes the first six digits, each government has discretion to determine more detailed product classification. Moreover, the Harmonized System was not designed to resolve the issue of whether products are similar according to the GATT.⁶² However, even if HS classification cannot be applied directly to decide like products, it is useful to support the decision regarding likeness based on other criteria.

A key issue in the case of measures based on the carbon footprint of products is whether processing and production methods of products (PPMs) can be used to determine likeness. Some might argue that, since the health effects of asbestos were relevant to determining likeness in *EC – Asbestos* (under the first and third criteria), the environmental effects of a production process are relevant to determine likeness. For example, Howse has argued that the Appellate Body ruling in *EC – Asbestos* supports the view that non-discriminatory process-based measures are consistent with GATT Article III:4, based on their consideration of consumer preferences.⁶³ The same evidence can be considered under both Articles III and XX, for different purposes, according to the Appellate Body in *EC – Asbestos*:

“Under Article III:4, evidence relating to health risk may be relevant in assessing the competitive relationship in the marketplace between allegedly “like” products. The same, or similar, evidence serves a different purpose under Article XX(b), namely, that of assessing whether a Member has a sufficient basis for “adopting or enforcing” a WTO-inconsistent measure on the grounds of human health.”⁶⁴

⁵⁹ Panel Report, *Indonesia – Autos*, above n 31, para 14.141.

⁶⁰ WTO Appellate Body Report, *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products (EC – Asbestos)*, WT/DS135/AB/R, adopted 5 April 2001, para 102.

⁶¹ *Ibid*, para 103.

⁶² Appellate Body Report, *Japan – Alcoholic Beverages II*, above n 58, at 25.

⁶³ Robert Howse, ‘The Appellate Body Rulings in the Shrimp/Turtle Case: A New Legal Baseline for the Trade and Environment Debate’, 27 *Colorado Journal of Environmental Law* 491 (2002), at 515.

⁶⁴ Appellate Body Report, *EC – Asbestos*, above n 60, para 115.

However, the measures at issue in *EC – Asbestos* can be distinguished from measures based on the carbon footprint of a product’s production process because the health effects of asbestos are related to the product as such, not its production method. Indeed, the principal argument against taking PPMs into account to determine likeness is that likeness should be based on the characteristics of the product as such. In *US – Tuna (Mexico)*, the GATT panel held that the term “like products” did not apply to production processes, but rather to products as such. It therefore did not permit differentiation between products based on production processes that had no effect on the quality of the product.⁶⁵ As an unadopted GATT report, *US – Tuna (Mexico)* has no normative value. However, a panel may find useful orientation in its reasoning.⁶⁶

It may be more appropriate to address the PPM issue under GATT Article XX, rather than GATT Article I or III, in order to avoid addressing the issue of whether PPMs should be used to determine likeness through judicial interpretation, which might be viewed as exceeding the role assigned to panels under DSU Article 3.2.⁶⁷

Gaines argues that the intention of the WTO members to not permit PPM-based trade measures under GATT, except under an Article XX exception, is confirmed by the explicit reference in the TBT Agreement to “products and related processes and production methods” and the absence of any corresponding amendment to Article III in GATT 1994, given the prevailing view that such measures were not allowed under Article III of GATT 1947.⁶⁸ The TBT Agreement is analyzed below.

One reason for advocating the inclusion of PPMs in the like product analysis is to avoid the restrictive interpretation of Article XX that was used by GATT panels. However, the interpretation of Article XX in *US – Shrimp* lessens the need to remove the PPMs analysis from Article XX.⁶⁹ Moreover, Article XX may be the more appropriate

⁶⁵ GATT Panel Report, *United States – Restrictions on Imports of Tuna (US – Tuna (Mexico))*, DS21/R, 3 September 1991, unadopted, BISD 39S/155, at 41. Also see WTO Appellate Body Report, *United States – Safeguard Measures on Imports of Fresh, Chilled or Frozen Lamb Meat from New Zealand and Australia (US – Lamb Safeguard)*, WT/DS177/AB/R, WT/DS178/AB/R, adopted 16 May 2001; WTO Appellate Body Report, *United States – Transitional Safeguard Measure on Combed Cotton Yarn from Pakistan (US – Cotton Yarn)*, WT/DS192/AB/R, 5 November 2001; and Marceau and Trachtman, above n 45, at 857-858.

⁶⁶ Appellate Body Report, *Japan – Alcoholic Beverages II*, above n 58, at 14-15.

⁶⁷ The Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU), GATT Secretariat, *The Results of the Uruguay Round of Multilateral Trade Negotiations, the Legal Texts* (Geneva, 1994), 354, Article 3.2 provides that ‘Recommendations and rulings of the DSB cannot add to or diminish the rights and obligations provided in the covered agreements’. Since the covered agreements do not clearly indicate whether non-product-related PPMs may be taken into account to determine likeness and this issue had been debated in the GATT context, a panel might consider it inappropriate to decide this question through treaty interpretation. See for example WTO Panel Report, *Canada – Patent Protection of Pharmaceutical Products (Canada – Pharmaceutical Patents)*, WT/DS114/R, adopted 7 April 2000, para 782, in which the panel declined to resolve through treaty interpretation an issue that remained an unresolved matter of debate among the WTO Members.

⁶⁸ Sanford E. Gaines, ‘Processes and Production Methods: How to Produce Sound Policy for Environmental PPM-Based Trade Measures?’, 27 *Colorado Journal of Environmental Law* 383 (2002), at 416.

⁶⁹ In WTO Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products – Recourse to Article 21.5 of the DSU by Malaysia (US – Shrimp (Malaysia – 21.5))*,

place to decide the complex issues at stake in the trade and environment debate, not only with respect to trade law, but also with respect to public international law.⁷⁰ Following this analysis, trade measures based on non-product-related PPMs would not be permitted under GATT Articles I or III and would have to be justified under Article XX.⁷¹

However, if non-product-related PPMs can only be considered under Article XX and if Article XX does not apply to the SCM Agreement, there would be no way to take PPMs into account in the SCM Agreement. Thus, it might be appropriate to determine whether non-product-related PPMs are relevant to determining likeness on a case-by-case basis, based on the evidence presented in each case. This approach would be consistent with the purpose of the like products analysis, “to take account of evidence which indicates whether, and to what extent, the products involved are – or could be – in a competitive relationship in the marketplace”.⁷² Moreover, the competitive relationship between products is not static, but rather evolves over time.⁷³ Thus, a factor that might not be considered relevant to this issue today could be relevant in the future.

Another possible approach is to consider the carbon ‘content’ of a product to be analogous to alcohol content. In *US – Malt Beverages*, the GATT panel found that beer with a low alcohol content and beer with a high alcohol content were not like products under GATT Article III:4 because the differentiation in treatment of low alcohol beer and high alcohol beer did not afford protection to domestic production.⁷⁴ However, in *Chile – Alcoholic Beverages*, the Appellate Body found that the differentiation in taxation of alcoholic beverages based on alcohol content was inconsistent with the second sentence of GATT Article III:2 because the products were directly competitive or substitutable and because the design of the measure did afford protection to domestic production.⁷⁵ These cases might support view that the likeness of low and high carbon content products under GATT Article III:4, or the issue of whether they are directly competitive or substitutable under the second sentence of GATT Article III:2, turns on the issue of whether the measure in question affords protection to domestic production. However, an important difference between alcohol content and carbon content is that the former is in fact part of the product itself, whereas carbon ‘content’ refers to the production process and is not part of the product itself. Thus, if the likeness of products depends on factors that affect the product as such, these cases would be less relevant.

Yet another approach might be to apply a tax to carbon content for domestic production and apply a border tax adjustment to the carbon content of imported products. If the measure applied the same tax rate to the value of the carbon content, rather than the

WT/DS58/AB/RW, adopted 21 November 2001, the Appellate Body permitted measures targeting non-product-related PPMs to be justified under GATT Article XX (g).

⁷⁰ Bradley J. Condon, *Environmental Sovereignty and the WTO: Trade Sanctions and International Law* (New York: Transnational Publishers, 2006), 63.

⁷¹ *Ibid.*, 68-69.

⁷² Appellate Body Report, *EC – Asbestos*, above n 60, para 103.

⁷³ I thank Deborah Elms for this insight. One example is the competitive relationship between cellular phones and cameras, which has changed as technology has evolved.

⁷⁴ GATT Panel Report, *United States – Measures Affecting Alcoholic and Malt Beverages (US – Malt Beverages)*, DS23/R - 39S/206, adopted 19 June 1992, paras 5.71-5.73.

⁷⁵ WTO Appellate Body Report, *Chile – Taxes on Alcoholic Beverages (Chile – Alcoholic Beverages)*, WT/DS87/AB/R, WT/DS110/AB/R, adopted 12 January 2000.

value of the products themselves, the measure could meet the national treatment requirement of Article III:2 first sentence.⁷⁶

GATT Article I would be relevant if imports from different WTO Members were treated differently. GATT Article I requires that like products be granted unconditional market access, which may imply that non-discriminatory access to the importing nation's market can not be made conditional upon the exporting country's environmental policies.⁷⁷ In *EC – Tariff Preferences*, in which access to tariff preferences were conditional upon countries suffering from an illicit drug problem, the Panel interpreted Article I:1 as prohibiting the placing of conditions on access to preferential treatment.⁷⁸ In *Indonesia – Autos* the panel held that an advantage could not be conditional upon criteria that were unrelated to the product itself.⁷⁹ However, it is not clear whether the issue of conditionality can be determined independently of the issue of whether products are like.⁸⁰ If the products under consideration are not like, would subjecting them to different treatment amount to a condition?

Finally, some have argued that, if regulatory categories are permissible in the determination of whether the treatment of imports was 'no less favourable', then PPMs might be considered in this part of the analysis.⁸¹ Others have argued that it is still better to address PPMs in Article XX.⁸² The resolution of this issue could affect the analysis in GATT Article III and TBT Agreement Article 2.1.⁸³ In order to address climate change and other environmental issues in the SCM Agreement, WTO Members will have to consider whether to address environmental subsidies under the like products analysis, the extension of GATT Article XX to the SCM Agreement or both. In doing so, they will have to keep in mind the systemic implications of this decision.

V. GATT Article XX

Two paragraphs b and g in GATT Article XX will play an important role in determining the kind of measures that may be used to combat climate change. In addition, the analysis under the chapeau of Article XX will determine how those measures should be applied.

⁷⁶ GATT Panel Report, *United States – Taxes on Petroleum and Certain Imported Substances*, L/6175 - 34S/136, adopted 17 June 1987, paras 5.2.7-5.2.8.

⁷⁷ Condon (2006), above n 70, at 54.

⁷⁸ WTO Panel Report, *European Communities – Conditions for the Granting of Tariff Preferences to Developing Countries (EC – Tariff Preferences)*, WT/DS246/R, adopted 20 April 2004, para 7.59.

⁷⁹ Panel Report, *Indonesia – Autos*, above n 31, para 14.145.

⁸⁰ WTO Panel Report, *Canada – Certain Measures Affecting the Automotive Industry*, WT/DS139/R, WT/DS142/R, adopted 19 June 2000, para 10.22; Mitsuo Matsushita, Thomas Schoenbaum, Petros Mavroidis, *The World Trade Organization: Law, Practice and Policy*, 2nd ed. (Oxford: Oxford University Press, 2006) 216.

⁸¹ Robert Howse and Elizabeth Tuerk, 'The WTO Impact on Internal Regulations – A Case Study of Canada – EC Asbestos Dispute' in G. de Burca and J. Scott, eds., *The EU and the WTO: Legal and Constitutional Issues* (Oxford: Hart Publishing, 2001).

⁸² Michael Trebilcock and S. Giri, 'The National Treatment Principle in International Trade Law', Law and Economics Workshop Series, Faculty of Law, University of Toronto, WS 2002-2003 (9), February 2003.

⁸³ See Marceau and Trachtman, above n 45 and Andrew James Green, 'Climate Change, Regulatory Policy and the WTO: How Constraining are Trade Rules?' 8 *Journal of International Economic Law* (2005).

Article XX(g) applies to measures “relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption”. This phrase raises four key issues. (1) Is the climate an “exhaustible natural resource”? (2) If a jurisdictional nexus is required between the Member enacting a measure and the natural resource, does a sufficient nexus exist between all WTO Members and the global climate? (3) How should a panel determine whether a specific measure relates to climate change? (4) Are the measures “made effective in conjunction with restrictions on domestic production or consumption”?

In *US – Shrimp*, the Appellate Body interpreted the term “exhaustible natural resources” to include both living and non-living natural resources.⁸⁴ The Appellate Body and GATT panels have found the following to be exhaustible natural resources: clean air;⁸⁵ migratory sea turtles;⁸⁶ salmon and herring;⁸⁷ tuna;⁸⁸ and dolphins.⁸⁹ In *US – Shrimp*, since the migratory sea turtles were listed under CITES as being in danger of extinction, the Appellate Body held that they were exhaustible natural resources. Preserving the global climate could be considered analogous to the preservation of clean air in *US – Gasoline*. Alternatively, the issue of the levels of carbon and other greenhouse gases in the atmosphere could be viewed as a clean air issue.⁹⁰ Multilateral environmental agreements on climate change might be taken into account to support the view that the global climate is an exhaustible natural resource. The following passage in *US – Shrimp* lends support to this view:

The words of Art. XX(g), “exhaustible natural resources”, ... must be read by a treaty interpreter in the light of contemporary concerns of the community of nations about the protection and conservation of the environment. [...] From the perspective embodied in the Preamble of the WTO Agreement [[Rf: objective of sustainable development]], the generic term of “natural resources” is not “static” in its content or reference but is rather, by definition, evolutionary.⁹¹

In *US – Shrimp*, the Appellate Body held there was a sufficient jurisdictional nexus between migratory sea turtles and the United States because they spent part of their migratory life cycle in American waters, without ruling on whether there was a jurisdictional limit implied in the language of Article XX(g). The effects of climate

⁸⁴ WTO Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products (US – Shrimp)*, WT/DS58/AB/R, adopted 6 November 1998, paras 128-131.

⁸⁵ WTO Appellate Body Report, *United States – Standards for Reformulated and Conventional Gasoline (US – Gasoline)*, WT/DS2/AB/R, adopted 20 May 1996.

⁸⁶ Appellate Body Report, *US – Shrimp*, above n 84.

⁸⁷ GATT Panel Report, *Canada – Measures Affecting Exports of Unprocessed Salmon and Herring (Canada – Salmon and Herring)*, L/6268 - 35S/98, adopted 22 March 1988.

⁸⁸ GATT Panel Report, *United States – Prohibition of Imports of Tuna and Tuna Products from Canada (US – Tuna from Canada)*, L/5198 - 29S/91, adopted 22 February 1982.

⁸⁹ GATT Panel Report, *US – Tuna (Mexico)*, above n 65.

⁹⁰ I thank the moot team from the University of Melbourne in the 2009 ELSA moot court competition on WTO law in Taipei, Taiwan for this observation (Ms. Bellamy, Mr. Kruse and Mr. Tran). The recent EPA decision to address greenhouse gases under the Clean Air Act supports this view. See above n 5 and accompanying text.

⁹¹ Appellate Body Report, *US – Shrimp*, above n 84, paras 129-130.

change are global. Therefore, there should be a sufficient jurisdictional nexus between all WTO Members and climate change.

The term “relating to” has been interpreted to mean “primarily aimed at”, rather than “necessary or essential”.⁹² The term “relating to” requires an examination of “the relationship between the measure at stake and the legitimate policy of conserving exhaustible natural resources”. This requires “a close and genuine relationship of ends and means” and an examination of “the relationship between the general structure and design of the measure...and the policy goal it purports to serve”.⁹³ Multilateral environmental agreements on climate change could serve as evidence that measures aimed at the reduction of greenhouse gas emissions relate to the conservation of the global climate. This could include measures such as differential tax treatment based on the different carbon emissions resulting from production processes, provided that there is a close and genuine relationship between the general structure and design of the measure and the policy goal of reducing carbon emissions to conserve the global climate. If the structure and design of the measure is based on specific obligations in a multilateral environmental agreement on climate change, it would be more likely to meet the requirements of paragraph g. While this is probably not essential, such specific obligations would provide evidence that the measure does relate to climate change.

Article XX(g) also requires that conservation measures be “made effective in conjunction with restrictions on domestic production or consumption”. In *US – Gasoline*, the Appellate Body interpreted “made effective” as referring to a governmental measure being “operative”, as “in force”, or as having “come into effect”. The clause does not establish an empirical “effects test” for the availability of the Article XX(g) exception. Rather, this clause is a requirement of even-handedness in the imposition of restrictions, in the name of conservation, upon the production or consumption of exhaustible natural resources, but does not require identical treatment of domestic and imported products.⁹⁴ It is not clear whether differences in the treatment of products, based on their impact on climate change, could meet this requirement without the differences in treatment being justified by reference to the evidence regarding the reasons for the differential treatment, such as scientific evidence comparing the carbon footprints of different products.

Article XX(b) applies to measures “necessary to protect human, animal or plant life or health”. This paragraph requires that the policy goal at issue falls within the range of policies designed to protect human, animal or plant life or health. In *Brazil – Retreaded Tyres*, the panel accepted that measures aimed at protecting Brazil’s environment fell within the range of policies covered by Article XX(b).

Once it is established that the policy goal fits the exception, the issue is whether the measure is “necessary” to achieve the policy goal. This analysis takes place in light of the level of risk that a Member sets for itself. To demonstrate that the measure is necessary involves weighing and balancing a series of factors. First, the greater the importance of the interests or values that the challenged measure is intended to protect, the more likely it is that the measure is necessary. Second, the greater the extent to which the measure contributes to the end pursued, the more likely that the measure is necessary.

⁹² GATT Panel Report, *Canada – Salmon and Herring*, above n 87; Appellate Body Report, *US – Gasoline*, above n 85; Appellate Body Report, *US – Shrimp*, above n 84.

⁹³ Appellate Body Report, *US – Shrimp*, above n 84.

⁹⁴ Appellate Body Report, *US – Gasoline*, above n 85, at 20-21.

Third, the less the trade impact of the challenged measure, the more likely that the measure is necessary. Fourth, whether a WTO-consistent alternative measure which the Member concerned could reasonably be expected to employ is available, or whether a less WTO-inconsistent measure is reasonably available. The weighing and balancing process of the first three factors also informs the determination of the fourth.⁹⁵

There is no question that environmental protection would be considered an important interest or value in Article XX(b). In *Brazil – Retreaded Tyres* the Panel found that “few interests are more ‘vital’ and ‘important’ than protecting human beings from health risks, and that protecting the environment is no less important”.⁹⁶ The Appellate Body agreed that protection of the environment is an important value.⁹⁷ However, the weight accorded to the objective of environmental protection could be less than that accorded to the objective of protecting human life or health, given the Appellate Body’s characterization of the former as “important” (*Brazil – Retreaded Tyres*) and of the latter as “both vital and important in the highest degree” (*EC – Asbestos*).

The extent to which a climate change measure contributes to the end pursued would be difficult to measure. A measure must be “apt to produce a material contribution to the achievement of its objective”.⁹⁸ A measure that only makes “a marginal or insignificant contribution” to the objective is not enough to be considered necessary.⁹⁹ Nevertheless, in *Brazil – Retreaded Tyres*, the Appellate Body emphasized the need to view the measure against the broader context of a comprehensive strategy to deal with a problem.¹⁰⁰ Moreover, the Appellate Body stated that the contribution of a trade-restrictive measure to address climate change, while not immediately observable, can be justified under Article XX(b):

“We recognize that certain complex public health or environmental problems may be tackled only with a comprehensive policy comprising a multiplicity of interacting measures. In the short-term, it may prove difficult to isolate the contribution to public health or environmental objectives of one specific measure from those attributable to the other measures that are part of the same comprehensive policy. Moreover, the results obtained from certain actions—for instance, measures adopted in order to attenuate global warming and climate change...—can only be evaluated with the benefit of time.”¹⁰¹

⁹⁵ WTO Appellate Body Report, *Korea – Measures Affecting Imports of Fresh, Chilled and Frozen Beef (Korea – Beef)*, WT/DS161/AB/R, adopted 10 January 2001; Appellate Body Report, *EC – Asbestos*, above n 60; WTO Appellate Body Report, *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services (US – Gambling)*, WT/DS285/AB/R, adopted 20 April 2005; WTO Appellate Body Report, *Dominican Republic – Measures Affecting the Importation and Internal Sale of Cigarettes (Dominican Republic – Cigarettes)*, WT/DS302/AB/R, adopted 19 May 2005; and WTO Appellate Body Report, *Brazil – Measures Affecting Imports of Retreaded Tyres (Brazil – Retreaded Tyres)*, WT/DS332/AB/R, adopted 17 December 2007.

⁹⁶ WTO Panel Report, *Brazil – Measures Affecting Imports of Retreaded Tyres (Brazil – Retreaded Tyres)*, WT/DS332/R, adopted 17 December 2007, para 7.108.

⁹⁷ Appellate Body Report, *Brazil – Retreaded Tyres*, above n 95, para 179.

⁹⁸ *Ibid*, para 151.

⁹⁹ *Ibid*, para 150.

¹⁰⁰ *Ibid*, para 154.

¹⁰¹ *Ibid*, para 151.

Regarding the trade impact of the challenged measure, if a “comprehensive regulatory strategy” is relevant the extent of the contribution, then it should also be examined in assessing the trade-restrictive impact of the measure. In that case, the cumulative impact of a series of climate change measures could together have much more significant restrictive effects than a measure considered in isolation.

The same issue arises regarding the issue of whether alternative measures would achieve the same objectives as the challenged measure. If the challenged measure is part of a comprehensive regulatory strategy and the effect of the measure might not be revealed in the near future, this will be a difficult point to argue. The Member defending the measure may point out why alternative measures would not achieve the same objectives as the challenged measure, but it is under no obligation to do so in order to establish, in the first instance, that its measure is “necessary”. If the complainant raises a WTO-consistent alternative measure that, in its view, the respondent should have taken, the respondent will be required to demonstrate why its challenged measure nevertheless remains “necessary” in the light of that alternative or, in other words, why the proposed alternative is not, in fact, “reasonably available”. If the respondent demonstrates that the alternative is not “reasonably available”, in the light of the interests or values being pursued and the party’s desired level of protection, it follows that the challenged measure must be “necessary”.¹⁰² Should the alternatives be considered in the light of relevant international norms, such as those set out in multilateral environmental agreements on climate change? Should any alternative measures be measures that the respondent can take alone, rather than measures that are beyond its control or that would require consultations or negotiations with other countries?¹⁰³ What kind of scientific evidence will be required?¹⁰⁴

The purpose of the chapeau is to prevent the abuse of the exceptions in Article XX. The chapeau embodies the recognition on the part of WTO Members of the need to maintain a balance between the right of a Member to invoke an exception on the one hand, and the substantive rights of the other Members on the other hand.¹⁰⁵

The chapeau requires that a measure that has been provisionally justified under one of the paragraphs of Article XX not be applied in a manner that constitutes: (1) arbitrary discrimination between countries where the same conditions prevail; (2) unjustifiable discrimination between countries where the same conditions prevail; or (3) a disguised restriction on international trade. The respondent has the burden of proof to show that the application of the measure meets the requirements of the chapeau. In order for the measure to pass the chapeau test, the respondent must prove that all three requirements have been met. In order for the measure to fail the chapeau test, the complainant only needs to show that one of these three requirements has not been met.

¹⁰² Appellate Body Report, *US – Gambling*, above n 95, paras 310-311.

¹⁰³ *Ibid*, paras 316-318.

¹⁰⁴ The Appellate Body has stated the following in this regard: ‘In justifying a measure under Article XX(b) of the GATT 1994, a Member may also rely, in good faith, on scientific sources which, at that time, may represent a divergent, but qualified and respected, opinion.’ Appellate Body Report, *EC – Asbestos*, above n 60, para 178, citing WTO Appellate Body Report, *European Communities – Measures Concerning Meat and Meat Products (Hormones) (EC – Hormones)*, WT/DS26/AB/R, WT/DS48/AB/R, adopted 13 February 1998, para 194.

¹⁰⁵ Appellate Body Report, *US – Shrimp*, above n 84.

There are three elements in the chapeau analysis of whether a measure is applied in a manner that constitutes “arbitrary or unjustifiable discrimination between countries where the same conditions prevail”: (1) the application of the measure results in discrimination; (2) the discrimination is arbitrary or unjustifiable; and (3) the discrimination occurs between countries where the same conditions prevail (between different exporting countries or between the exporting countries and the importing country). The chapeau also refers to disguised restrictions on international trade. The jurisprudence has tended to find that the evidence that supports a finding of arbitrary or unjustifiable discrimination also supports a finding of disguised restrictions on international trade.¹⁰⁶

In *US – Gasoline* and *US – Shrimp*, the Appellate Body identified two main criteria to determine whether discrimination that has been shown to exist is arbitrary or unjustifiable: (1) a serious effort to negotiate with a view to achieving the policy goal of the measure at stake; and (2) flexibility of the measure (e.g. in taking into account the situation prevailing in other countries). With respect to the second criteria, in *US – Shrimp (Art. 21.5)*, the Appellate Body agreed with the Panel that conditioning market access on the adoption of a programme *comparable in effectiveness*, allows for sufficient flexibility in the application of the measure, so as to avoid arbitrary or unjustifiable discrimination.¹⁰⁷

In *US – Shrimp*, the Appellate Body found that the American regulations were arbitrary or unjustifiable because the US: (1) required WTO members to adopt “essentially the same policy” as that applied in the United States without taking into account other policies and measures a country may have adopted that would have a comparable effect on sea turtle conservation; (2) applied the same standard without taking into consideration whether it was appropriate for the conditions prevailing in other countries; (3) failed to engage in “serious, across-the-board negotiations with the objective of concluding bilateral or multilateral agreements for the protection and conservation of sea turtles, before enforcing the import prohibition”; and (4) failed to provide due process in the denial of certification compared to those who were granted certification.¹⁰⁸ However, the chapeau does not require that a Member succeed in its efforts to negotiate a multilateral solution to a transnational environmental problem.¹⁰⁹

In *Brazil – Retreaded Tyres*, the Appellate Body held that “there is arbitrary or unjustifiable discrimination when a measure provisionally justified under a paragraph of Article XX is applied in a discriminatory manner ‘between countries where the same conditions prevail’, and when the reasons given for this discrimination bear no rational connection to the objective falling within the purview of a paragraph of Article XX, or would go against that objective”.¹¹⁰ This requirement that the reasons for the discrimination relate to the objective of the particular paragraph of Article XX might explain diverging WTO jurisprudence on whether the chapeau requires an effort to

¹⁰⁶ See Appellate Body Report, *US – Gasoline*, above n 85, at 23, WTO Panel Report, *Brazil – Retreaded Tyres*, above n 96, para 7.319 and Appellate Body Report, *Brazil – Retreaded Tyres*, above n 95, para 239. Also see Condon (2006), above n 70, at 121.

¹⁰⁷ Appellate Body Report, *US – Shrimp (Art. 21.5)*, above n 69, para 144.

¹⁰⁸ Appellate Body Report, *US – Shrimp*, above n 84, paras 163-166, 181.

¹⁰⁹ Appellate Body Report, *US – Shrimp (Art. 21.5)*, above n 69.

¹¹⁰ Appellate Body Report, *Brazil – Retreaded Tyres*, above n 95, para 227.

negotiate prior to employing trade restrictions to address environmental issues. In the two WTO cases involving paragraph g, the Appellate Body found that a failure to negotiate led to a failure to comply with the non-discrimination requirements of the chapeau.¹¹¹ In *US – Shrimp*, it was unclear whether the obligation to negotiate stemmed from multilateral environmental documents that expressed a preference for multilateral solutions to transboundary or global environmental problems or whether it stemmed from the American failure to negotiate with Asian countries having done so with countries in the Americas. In the cases involving paragraph b, the Appellate Body has not found any obligation to negotiate in order to comply with the non-discrimination requirements of the chapeau.¹¹²

The divergence in the jurisprudence might be explained by arguing that paragraphs b and g apply to different matters.¹¹³ This might explain why in some cases the avoidance of arbitrary or unjustifiable discrimination requires an effort to negotiate. The rule of effective treaty interpretation requires that treaty terms be interpreted so as to avoid redundancy. This suggests that paragraphs b and g must apply to different matters. However, paragraph g has been applied to measures aimed at the conservation of animals (migratory turtles,¹¹⁴ salmon,¹¹⁵ herring,¹¹⁶ tuna¹¹⁷ and dolphins¹¹⁸) and paragraph b has also been applied to a measure aimed at protecting animals (monkeys in Brazil¹¹⁹). The only obvious difference in these animals is that those considered under paragraph g are migratory, and hence a transboundary environmental issue, whereas the monkeys considered under paragraph b are not migratory, and hence a domestic environmental issue. In addition to migratory species, a clean air measure has been addressed under paragraph g. While the clean air at issue was that of the United States, and hence domestic, clean air is a transboundary environmental issue. Air pollution does not respect national boundaries.¹²⁰ Thus, the case law supports the view that one difference between the two paragraphs might be that b addresses domestic issues and g addresses transboundary issues. An analysis under the Vienna Convention on the Law of Treaties, Articles 31, 32 and 33 also supports this view.¹²¹

¹¹¹ Appellate Body Report, *US – Gasoline*, above n 85 and Appellate Body Report, *US – Shrimp*, above n 84.

¹¹² Appellate Body Report, *EC – Asbestos*, above n 60 and Appellate Body Report, *Brazil – Retreaded Tyres*, above n 95. Also see Appellate Body Report, *US – Gambling*, above n 95 (considering a comparable provision in Article XIV of the GATS).

¹¹³ See Bradley J. Condon, 'GATT Article XX and Proximity of Interest: Determining the Subject Matter of Paragraphs b and g', 9:2 *UCLA Journal of International Law and Foreign Affairs* 137-162 (2004).

¹¹⁴ Appellate Body Report, *US – Shrimp*, above n 84 and Appellate Body Report, *US – Shrimp (Art. 21.5)* (Appellate Body), above n 69.

¹¹⁵ GATT Panel Report, *Canada – Salmon and Herring*, above n 87.

¹¹⁶ *Ibid.*

¹¹⁷ GATT Panel Report, *US – Tuna from Canada*, above n 88.

¹¹⁸ GATT Panel Report, *US – Tuna (Mexico)*, above n 65.

¹¹⁹ Appellate Body Report, *Brazil – Retreaded Tyres*, above n 95.

¹²⁰ Examples include forest fires in Mexico causing air pollution in the United States and air pollution in the United States causing acid rain in Canada.

¹²¹ Vienna Convention on the Law of Treaties, opened for signature 23 May 1969, 1155 UNTS 331 (entered into force 27 January 1980). I have addressed these arguments elsewhere. See Condon (2004), above n 113.

The obvious objection to the notion that paragraph (g) addresses only transboundary issues is that this appears to exclude exhaustible natural resources that are contained within one country's borders, such as mineral resources. The answer to this objection is not obvious. One possibility is to consider that mineral resources are a finite global resource, even when they are contained within the borders of one country.¹²² Another possibility is to address domestic resources under other exceptions, such as: GATT Article XI:2 (a) (for export restrictions temporarily applied to prevent or relieve critical shortages of products essential to the exporting Member); GATT Article XX (i) (for restrictions on exports of domestic materials necessary to ensure essential quantities of such materials to a domestic processing industry); GATT Article XX (j) (for measures essential to the acquisition or distribution of products in general or local short supply); or GATT Article XXI (for measures necessary for the protection a Member's essential security interests).¹²³

The different thresholds in paragraphs b and g also suggest that they apply to different matters. WTO jurisprudence has indicated that the term "necessary" sets a higher threshold than the term "relating to". At the same time, WTO jurisprudence has indicated that there is no interest or value more important than human life and health.¹²⁴ It would be an odd result to set a higher threshold for measures that aim to preserve human life and health than for the conservation of an exhaustible natural resource.¹²⁵ One solution to this conundrum is for WTO jurisprudence to evolve to a point where the threshold converges.¹²⁶ If one considers that the avoidance of arbitrary or unjustifiable discrimination under the chapeau requires WTO Members to seek multilateral solutions to address the conservation of transboundary resources, while no such requirement exists for measures that address the protection of domestic human, animal or plant life or health, the analysis under the chapeau would eliminate any difference in the thresholds in paragraphs b and g. In other words, the term "relating to", in combination with a negotiation requirement, would set a higher threshold than the term "necessary" without a negotiation requirement.¹²⁷ It is also inappropriate to require international cooperation or negotiations to address domestic health issues, since each WTO Member has the right to determine its appropriate level of health protection¹²⁸ and this issue is entirely within each Member's jurisdiction.¹²⁹

¹²² I thank David Morgan for this idea.

¹²³ I thank David Morgan again for helping me on this point.

¹²⁴ Appellate Body Report, *EC – Asbestos*, above n 60, para 172.

¹²⁵ Another possible reason for a stricter threshold in paragraph b is that the cause of protecting human, animal or plant life or health can be more easily abused by Members because it is more subjective than the conservation of natural resources, which can be determined more objectively. I thank one of the anonymous reviewers for making this point.

¹²⁶ I thank Professor Matsushita for this idea.

¹²⁷ Indeed, a negotiation requirement could act as a barrier to litigation, not just a threshold issue in litigation. In the context of GATS Article XIV (a), the Appellate Body disagreed with the panel that the term 'necessary' implied a negotiation requirement. See Appellate Body Report, *US – Gambling*, above n 95, paras 308, 317 and 321. However, the circumstances in which there might be a negotiation requirement in the chapeau of GATT Article XX or GATS Article XIV has not been resolved in WTO jurisprudence.

¹²⁸ Appellate Body Report, *EC – Asbestos*, above n 60, paras 167-168.

¹²⁹ Indeed, limiting the scope of paragraph (b) to domestic concerns resolves the question of whether there is an implicit jurisdictional limitation in paragraph (b) and paragraph (g).

Other paragraphs that use the term “necessary” are consistent with the idea that this threshold applies to domestic matters. GATT Article XX(a) applies this term to “public morals” and General Agreement on Trade in Services (GATS)¹³⁰ Article XIV(a) to “public morals” and “public order”. Since the standards for public morals vary from one country to the next (and even among communities within the same country), it is reasonable to conclude that these paragraphs apply to domestic issues. Similarly, public order is a domestic issue. GATT Article XX(d) and GATS Article XIV(c) apply the term “necessary” to measures to secure compliance with laws or regulations. The Appellate Body has held that the term “laws or regulations” in GATT Article XX(d) refers to domestic laws or regulations.¹³¹ GATS Article XIV(b) applies to the same subject matter as GATT Article XX(b).

If Article XX(b) does not apply to transnational or global environmental concerns, measures aimed at addressing climate change would not fall within the range of policies covered by Article XX(b), unless it could be shown that the measures also addressed domestic environmental or health concerns. While climate change is a global issue, it can also affect domestic issues such as human health.¹³² It is possible for more than one paragraph in Article XX to apply to different aspects of the same measure.¹³³ Thus, measures aimed at climate change could be characterized as addressing both transnational and domestic issues, allowing both paragraphs to apply. The issue of whether a measure addresses a transnational or domestic problem is a question of fact. The scope of paragraphs b and g is a question of law.

VI. Technical Barriers to Trade

The TBT Agreement is likely to come into play with respect to some measures related to climate change, particularly standards. When a Member alleges that a measure violates both the TBT Agreement and GATT 1994, the allegations under the former are examined first.¹³⁴ The Preamble of the TBT Agreement states that it is intended to “further the objectives of GATT 1994”. While the Appellate Body has indicated that the TBT Agreement “does so through a specialized regime that applies solely to a limited class of measures”,¹³⁵ the jurisprudence also indicates that the two agreements apply cumulatively.¹³⁶ Marceau and Trachtman argue that compliance with the more stringent

¹³⁰ GATT Secretariat, *The Results of the Uruguay Round of Multilateral Trade Negotiations, the Legal Texts* (Geneva, 1994), 284.

¹³¹ Appellate Body Report, *Mexico – Tax Measures on Soft Drinks and Other Beverages (Mexico – Taxes on soft drinks)*, WT/DS308/AB/R, adopted 24 March 2006, para 69.

¹³² Climate change may affect human health by extending the range of tropical diseases. See Bradly J. Condon and Tapen Sinha, *Chronicle of a Pandemic Foretold: Lessons from the 2009 Influenza Epidemic*, <http://ssrn.com/abstract=1398445> (visited 23 May 2009).

¹³³ In WTO Appellate Body Report, *European Communities – Regime for the Importation, Sale and Distribution of Bananas (EC – Bananas III)*, WT/DS27/AB/R, adopted 25 September 1997, para 221, the Appellate Body ruled that the GATT and the GATS could apply to different aspects of the same measure.

¹³⁴ WTO Appellate Body Report, *European Communities – Trade Description of Sardines (EC – Sardines)*, WT/DS231/AB/R, adopted 23 October 2002.

¹³⁵ Appellate Body Report, *EC – Asbestos*, above n 60, para 80.

¹³⁶ WTO Panel Report, *European Communities – Trade Description of Sardines (EC – Sardines)*, WT/DS231/R, adopted 23 October 2002, paras 7.15-7.16; Appellate Body Report, *EC – Sardines*, above n 134, para 313; Appellate Body Report, *EC – Bananas III*, above n 133, para 204.

requirements of the TBT Agreement should give rise to a presumption of compliance with GATT. In particular, a technical regulation that complies with TBT Agreement Articles 2.1 and 2.2 is likely to be compatible with GATT Article I, III and XX. However, a measure could be justifiable under GATT Article XX and not meet the requirements of the TBT Agreement.¹³⁷

For the TBT Agreement to apply to a regulation, it must meet the definition of “technical regulation” in Annex 1.1.¹³⁸ According to the Appellate Body, a document must meet three criteria to fall within this definition: (1) The document must apply to an identifiable product or group of products. The identifiable product or group of products need not, however, be expressly identified in the document. (2) The document must lay down one or more characteristics of the product. These product characteristics may be intrinsic, or they may be related to the product, e.g. the means of identification, presentation and appearance of the product.¹³⁹ They may be prescribed or imposed in either a positive or a negative form. (3) Compliance with the product characteristics must be mandatory.¹⁴⁰

Annex 1.1 permits the document to lay down “related processes and production methods” or to “deal exclusively with...labelling requirements as they apply to a product, process or production method”. Thus, PPM labels appear to be covered by the TBT Agreement.¹⁴¹ However, it appears that this criterion is not met if the only characteristic that the regulation lays down is not “related” to the products themselves.¹⁴² The definition of a technical regulation in Annex 1, “document which lays down product characteristics or *their related* processes and production methods” (emphasis added), would suggest that the TBT Agreement does not apply to non product-related PPMs (i.e. PPMs that do not leave any trace in the final product itself). However, this is an odd result if the intention was to prohibit the use of non product-related PPMs to differentiate between otherwise like products. If the TBT Agreement does not regulate the use of non product-related PPMs, it can not prohibit them.¹⁴³

TBT Agreement Article 2.1 provides as follows: “Members shall ensure that in respect of technical regulations, products imported from the territory of any Member shall be accorded treatment no less favourable than that accorded to like products of national origin and to like products originating in any other country”. The term “like products” should be more narrowly construed in TBT Agreement Article 2.1 than in GATT Articles I and III if GATT Article XX does not apply to the TBT Agreement.¹⁴⁴ PPMs that do not affect the product as such might not be taken into account in determining likeness. Thus, once a complainant meets its burden of proving likeness, it

¹³⁷ Marceau and Trachtman, above n 45, at 873-874.

¹³⁸ Appellate Body Report, *EC – Asbestos*, above n 60, para 59; Appellate Body Report, *EC – Sardines*, above n 134, para 175.

¹³⁹ Appellate Body Report, *EC – Asbestos*, above n 60.

¹⁴⁰ Appellate Body Report, *EC – Sardines*, above n 134, para 176.

¹⁴¹ Marceau and Trachtman, above n 45, at 861.

¹⁴² Marceau and Trachtman, above n 45, at 862.

¹⁴³ I thank Lothar Ehring for this insight. If this is the case, then it is possible that the intention was to regulate non product-related PPMs only in the GATT and not in the TBT Agreement. A contrary argument is that the prohibition of discrimination between like products in TBT Agreement Article 2.1 means that the TBT Agreement does regulate non product-related PPMs.

¹⁴⁴ Marceau and Trachtman, above n 45, at 822.

may be difficult for a respondent to disprove this aspect of Article 2.1 based on the impact of PPMs on climate change. Moreover, if the categorization of products is in fact based on their origin, this should relieve the complainant of the obligation to prove that the products are similar, in accordance with WTO jurisprudence under GATT Article I:1, III:2 and III:4 that, where differential treatment is based on the origin of products, that distinction is sufficient to find a violation.¹⁴⁵

While the terms “no less favourable treatment than” have not been tested in dispute settlement proceedings in the TBT context, in relation to GATT Article III:4, the Appellate Body has indicated that whether or not products are treated less favorably should be assessed by examining whether a measure modifies the conditions of competition in the relevant market to the detriment of imported products.¹⁴⁶ However, if a detrimental effect on an imported product is explained by factors or circumstances unrelated to the foreign origin of the product, this does not necessarily imply that the challenged measure accords less favourable treatment to imports within the meaning of GATT Article III:4.¹⁴⁷

TBT Agreement Article 2.2 provides as follows:

Members shall ensure that technical regulations are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade. For this purpose, technical regulations shall not be more trade-restrictive than necessary to fulfil a legitimate objective, taking account of the risks non-fulfilment would create. Such legitimate objectives are, *inter alia*: national security requirements; the prevention of deceptive practices; protection of human health or safety, animal or plant life or health, or the environment. In assessing such risks, relevant elements of consideration are, *inter alia*: available scientific and technical information, related processing technology or intended end-uses of products.

The first issue under Article 2.2 is whether the regulation in question pursues a legitimate objective. The objective of the climate change regulations is likely to be presented as the “protection of...animal or plant life or health, or the environment”. *Brazil – Retreaded Tyres* supports the argument that the protection of the animal and plant life or health through the reduction of carbon emissions, like the protection of animal and plant life or health in Brazil through the reduction of air, water and soil pollution, falls within the range of policies covered by the “protection of...animal or plant life or health, or the environment”. It is unclear whether the issue of scientific proof should be addressed under the phrase “risks non-fulfilment would create” or at this point in the analysis.

The second issue under Article 2.2 is whether the regulation in question creates unnecessary obstacles to international trade. This in turn raises two issues: (1) whether

¹⁴⁵ **III:2**: WTO Panel Report, *Argentina – Measures Affecting the Export of Bovine Hides and the Import of Finished Leather (Argentina – Hides and Leather)*, WT/DS155/R, adopted 16 February 2001, paras 11.168-11.170; WTO Panel Report, *Indonesia – Autos*, above n 31, para 14.113; WTO Panel Report, *India – Measures Affecting the Automotive Sector (India – Autos)*, adopted 5 April 2002, para 7.174; **III:4**: WTO Panel Report, *Korea – Measures Affecting Imports of Fresh, Chilled and Frozen Beef (Korea – Beef)*, WT/DS161/R, WT/DS169/R, adopted 10 January 2001, para 627; **I:1**: WTO Panel Report, *United States – Import Measures on Certain Products from the European Communities (US – Certain EC products)*, WT/DS165/R, adopted 10 January 2001, para 6.54.

¹⁴⁶ Appellate Body Report, *Korea – Beef*, above n 95, para 137.

¹⁴⁷ Appellate Body Report, *Dominican Republic – Cigarettes*, above n 95, para 96.

the regulation creates obstacles to trade and (2) whether the obstacles to trade are “unnecessary”. GATT/WTO jurisprudence would suggest that the term “unnecessary” refers to the issue of whether there are WTO-consistent measures that are reasonably available and equally effective in achieving the goal of the measure.¹⁴⁸ In making this determination, it is important to recall that the Preamble of the TBT Agreement allows each Member to determine the level of protection it considers appropriate. Moreover, any alternative measures should be measures that the respondent can take, rather than measures that are beyond its control and that would require consultations or negotiations with other WTO Members.¹⁴⁹

The third issue under Article 2.1 is whether the regulation in question has been “prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade”. This suggests an inquiry into both the design of the measure and the effect of the measure. The Article XX chapeau language in the sixth paragraph of the Preamble of the TBT Agreement might be used as context to interpret this obligation.

The fourth issue is whether the regulation is more trade-restrictive than necessary to fulfill a legitimate objective. Unlike under GATT Article XX(b), under TBT Agreement Article 2.2, the complainant bears the burden of proof to show that the regulation is more trade-restrictive than necessary.¹⁵⁰ GATT/WTO jurisprudence would suggest that the term “more trade-restrictive than necessary” refers to the issue of whether there are less WTO-inconsistent measures that are reasonably available and equally effective in achieving the goal of the measure.

The phrase “taking account of the risks non-fulfillment would create” may suggest an analysis of the importance of the values and policies and the contribution of the measure to the end pursued.¹⁵¹ The argument regarding whether the regulation pursues a legitimate objective, together with the explicit reference to environmental protection and the protection of human, animal or plant life or health as legitimate objectives, should apply to the issue of importance of the values. The contribution of the measure to the end pursued may require the support of the available scientific evidence. However, in the case of climate change measures that form part of a comprehensive scheme, the Appellate Body has pointed out that evidence of the effect of the measure is essential to meet this requirement in the context of GATT Article XX(b).¹⁵² The same should be true in the context of TBT Agreement Article 2.2. Moreover, since the TBT Agreement does not explicitly regulate risk assessment or require scientific bases for regulations, the implicit requirement for some scientific basis should be significantly less rigorous than the

¹⁴⁸ As noted above, GATT and WTO jurisprudence have interpreted the term ‘necessary’ in GATT Article XX(b) and GATS Article XIV(a) to require a determination of whether a WTO-consistent alternative measure which the Member concerned could reasonably be expected to employ is available, or whether a less WTO-inconsistent measure is reasonably available. TBT Agreement Article 2.2 uses the phrase ‘unnecessary obstacles to international trade’ in the first sentence and the phrase ‘more trade-restrictive than necessary’ in the second sentence. The first phrase appears to refer to the alternative of a WTO-consistent measure, whereas the second phrase appears to refer to the alternative of a less WTO-inconsistent measure.

¹⁴⁹ Appellate Body Report, *US – Gambling*, above n 95 paras 316-318.

¹⁵⁰ Marceau and Trachtman, above n 45, at 831.

¹⁵¹ *Ibid*, at 831.

¹⁵² Appellate Body Report, *Brazil – Retreaded Tyres*, above n 95, para 151.

explicit requirements of the SPS Agreement.¹⁵³ Article 2.2 only requires a consideration of “*available* scientific and technical information” (emphasis added). This does not require *conclusive* scientific evidence. According to the Appellate Body, “In justifying a measure under Article XX(b) of the GATT 1994, a Member may also rely, in good faith, on scientific sources which, at that time, may represent a divergent, but qualified and respected, opinion.”¹⁵⁴ The same reasoning should apply in the context of TBT Agreement Article 2.2.

TBT Agreement Article 2.5 creates a rebuttable presumption of compliance with Article 2.2 where a technical regulation for one of the explicitly mentioned legitimate objectives is in accordance with relevant international standards. In *EC – Hormones*, the Appellate Body refused to read into SPS Agreement Article 3.2 a reverse presumption that non-compliance with an international standard leads to an inference of non-compliance, so deviations from international standards is not prohibited.¹⁵⁵ A multilateral environmental agreement on climate change might qualify as a relevant international standard if membership is open to all WTO Members. Unlike in the SPS Agreement, where the standard setting bodies are clearly and exhaustively identified,¹⁵⁶ the organizations or bodies that could develop “standards” within the definition of TBT Annex 1 are not. On this basis, it could be argued that an environmental agreement with quasi-universal membership could develop international standards that may fall within the scope of the TBT Agreement.¹⁵⁷

TBT Agreement Article 2.4 provides as follows:

Where technical regulations are required and relevant international standards exist or their completion is imminent, Members shall use them, or the relevant parts of them, as a basis for their technical regulations except when such international standards or relevant parts would be an ineffective or inappropriate means for the fulfilment of the legitimate objectives pursued, for instance because of fundamental climatic or geographical factors or fundamental technological problems.

The complainant bears the burden of proof in seeking a ruling of inconsistency with Article 2.4.¹⁵⁸ Members have to use relevant international standards that currently exist or whose completion is imminent with respect to the technical regulations that are already in existence.¹⁵⁹ Even if not adopted by consensus, an international standard can constitute a relevant international standard.¹⁶⁰ To be a “relevant international standard”, the standard at issue would have to “bear upon, relate to, or be pertinent to” the regulation.¹⁶¹ There must be a very strong and very close relationship between two things in order to be able

¹⁵³ Marceau and Trachtman, above n 45, at 836.

¹⁵⁴ Appellate Body Report, *EC – Asbestos*, above n 60, para 178.

¹⁵⁵ Marceau and Trachtman, above n 45, at 842.

¹⁵⁶ CODEX, OIE, IPPC – see SPS Agreement, Annex A.

¹⁵⁷ On this question, the TBT Committee *Decision on Principles for the development of international standards, guides and recommendations with relation to Article 2, 5 and Annex 3 of the Agreement* can be informative, though it remains a Committee Decision (see section B of Annex to Part I).

¹⁵⁸ Appellate Body Report, *EC – Sardines*, above n 134, paras 274-275.

¹⁵⁹ WTO Panel Report, *EC – Sardines*, above n 136, para 7.74; Appellate Body Report, *EC – Sardines*, above n 134, para 205.

¹⁶⁰ Appellate Body Report, *EC – Sardines*, above n 134, para 227.

¹⁶¹ WTO Panel Report, *EC – Sardines*, above n 136, para 7.68.

to say that one is ‘the basis for’ the other. A standard is used as a basis for a technical regulation when it is used as the principal constituent or fundamental principle for the purpose of enacting the technical regulation.¹⁶² A multilateral environmental agreement on climate change that sets standards might qualify as a relevant international standard if membership is open to all WTO Members, in light of the definition in Annex 1.4 of “international body or system” as a “Body or system whose membership is open to the relevant bodies of at least all Members”. Article 12.4 provides that “developing country Members should not be expected to use international standards as a basis for their technical regulations...which are not appropriate to their development, financial and trade needs”. This might entitle them to more leeway, but this provision is not mandatory.

It is unlikely that GATT Article XX could be invoked to justify a violation of the TBT Agreement. The text of the TBT Agreement already incorporates language from paragraph b and the chapeau of Article XX. The sixth paragraph of the Preamble of the TBT Agreement uses the same terms as the Article XX chapeau and paragraph XX(b). The chapeau language might be used as context to interpret the obligation in the first sentence of Article 2.2 that technical regulations not be “applied with a view to or with the effect of creating unnecessary obstacles to trade”. The TBT Agreement preamble contains no language that is comparable to the terms used in GATT Article XX(g). The incorporation of specific language in the TBT Agreement, instead of incorporating specific provisions of GATT Article XX, suggests that the latter does not apply to the former.

VII. Concluding Comments

The ongoing implementation of climate change policies could raise several unresolved issues in WTO law. GATT Article XX will play an important part in determining the WTO consistency of climate change measures. The scope of paragraphs b and g in GATT Article XX still need to be defined in many aspects, as does the relationship between these two paragraphs. Multilateral environmental agreements on climate change will probably be relevant to determining the consistency of climate change measures with GATT Article XX and the provisions of the TBT Agreement that use similar language to that used in GATT Article XX. However, it is unlikely that GATT Article XX will be applied to the SCM Agreement, the Agreement on Agriculture or the TBT Agreement. Its application to other agreements in Annex 1A will have to be analyzed on a case-by-case basis.

If processing and production methods are relevant to determining the issue of “like products” in GATT Articles I and III, the SCM Agreement and the Antidumping Agreement and the TBT Agreement, then this may provide an alternative analytical approach to determine the WTO consistency of climate change measures. Again, this will have to be analyzed on a case-by-case basis in light of specific climate change measures. However, if environmental subsidies are designed so that they are not specific to certain enterprises, they will be not be subject to multilateral action under Part III or unilateral action under Part V. If the subsidies apply to agricultural products, they will have to comply with the commitments of Members under the Agreement on Agriculture. In the case of export subsidies, compliance with the Agreement on Agriculture may shield

¹⁶² Appellate Body Report, *EC – Sardines*, above n 134, para 245.

subsidies on agricultural products from action under SCM Agreement Article 3.1 (a). However, opinion differs on this issue and this issue will become moot once export subsidies are eliminated. In the case of subsidies contingent on the use of domestic products, it will be necessary to comply with both the SCM Agreement and the Agreement on Agriculture.

Several important issues need to be addressed in future research in this area, including a more detailed analysis of the TBT Agreement, a more detailed analysis of the relationship between the SCM Agreement and the GATT, and an analysis of the WTO consistency of specific climate change measures, in particular border tax adjustments.